

Claims

1. An apparatus for mounting and cooling a flat screen during operation, comprising a housing for accommodating the flat screen and heat generating electric and electronic units, and at least one thermal bridge for conducting the heat generated by these units to a heat conductive plate arranged at a rear side of the housing, said plate being provided with a profile for faster cooling of the plate, wherein

the plate forms a rear wall of the housing, the profile forms a plurality of chimney-like cavities on the rear side of the housing, said cavities each comprising a lower end portion and an upper end portion, wherein in the lower end portion at least one opening for supplying cool air into the respective cavity is formed and in the upper end portion at least one outlet opening for discharging heated air from the cavity to the atmosphere is formed, and

the rear wall of the housing comprises a plurality of through holes arranged in an area of the cavities, said through holes serving for supplying and discharging air into and from a space arranged between the heat generating units and the rear wall.

2. An apparatus as claimed in claim 1, wherein the housing comprises a housing frame and a thermal bridge made of heat conductive material is formed on at least one position of a printed circuit board attached on the housing frame, with a plurality of heat generating components of the flat screen being arranged on said printed circuit board, said thermal bridge being oriented towards the rear wall of the housing and contacting the rear wall in operation.
3. An apparatus as claimed in claim 2, in which the air located between the printed circuit board and a final front glass plate of the flat screen and being heated during operation is conducted into a space between the printed circuit board and the rear wall via at least one channel.

4. An apparatus as claimed in one of claims 1 to 3, in which the profile is attached to the rear wall by means of screws.

5. An apparatus as claimed in one of claims 1 to 3, in which the chimney-like cavities have an essentially cartridge-like cross section which has a rounded apex directed to the outside,

6. An apparatus as claimed in claim 4, in which the chimney-like cavities have an essentially cartridge-like cross section which has a rounded apex directed to the outside.

7. An apparatus as claimed in one of claims 1 to 3, wherein the chimney-like cavities each have a spacing from one another.

8. An apparatus as claimed in one of claims 2 and 3, in which the housing frame and the rear wall are formed of extruded aluminium profiles.

9. An apparatus as claimed in claim 8, in which the housing frame consists of a plurality of parts that are joined by means of laser welding.

10. An apparatus for mounting and cooling a flat screen during operation, comprising a housing for accommodating the flat screen, and comprising heat-generating electric and electronic units, and at least one thermal bridge for conducting the heat generated by these units to a heat conductive plate arranged at a rear side of the housing, said plate being provided with a profile for faster cooling of the plate, wherein

the plate forms a rear wall of the housing, the profile is attached on the rear wall of the housing by means of screws and together with the rear wall forms a plurality of chimney-like cavities, which are arranged at mutual distance and have a substantially cartridge-like cross section with a rounded apex directed to the outside and each comprise a lower end portion and an upper end portion, wherein in the lower end portion at least one opening is formed for supplying cool air into the respective cavity and in the upper end portion at least one outlet opening is formed for discharging heated air from the cavity to the atmosphere,

the rear wall of the housing comprises a plurality of through holes arranged in the area of the cavities, said through holes serving for supplying and discharging air into and from a space arranged between the heat generating units and the rear wall,

the housing comprises a housing frame, and a thermal bridge of a heat-conductive material is formed on at least one position of a printed circuit board attached at the housing frame, with a plurality of heat generating components of the flat screen being arranged on the printed circuit board, and said thermal bridge being oriented towards the rear wall of the housing and contacting the rear wall in the operative condition, and

the air located between the printed circuit board and a final front glass plate of the flat screen heated during operation of the screen is introduced via at least one channel into the space between the printed circuit board and the rear wall.